

4725.4250 LIMESTONE OR DOLOMITE WATER-SUPPLY WELLS.

Subpart 1. **Applicability.** This part applies to water-supply wells, including private drinking water supply, public drinking water supply, irrigation, commercial, groundwater thermal exchange, and remedial wells completed in or below limestone or dolomite. This part does not apply to borings, monitoring wells, or dewatering wells.

Subp. 2. **Plastic casing.** Plastic casing must not be used as an outside casing in a water-supply well cased more than five feet into limestone or dolomite bedrock, except that an inner plastic casing may be installed entirely inside an outer steel casing in accordance with part 4725.2250, subpart 8.

Subp. 3. **Bore hole size.** A casing that extends more than ten feet into limestone or dolomite bedrock must be installed in a bore hole a minimum of 3.0 inches larger, or 3.5 inches larger for casings deeper than 100 feet and larger than 12 inches inside diameter, than the outer diameter of the casing or couplings, whichever is larger.

Subp. 4. **Use of limestone or dolomite for potable supply.**

A. A water-supply well used to provide potable water must not be completed in limestone or dolomite bedrock unless the limestone or dolomite bedrock is overlain by at least 50 feet of unconsolidated material, sandstone, or shale that extends in all directions around the well for a minimum one-mile radius. Limestone or dolomite bedrock includes the Cedar Valley through Galena groups, Platteville formation, and the Prairie du Chien group.

B. The commissioner may establish limestone and dolomite bedrock well construction maps identifying areas of known or suspected contamination, areas with unique hydrologic or geologic conditions, or areas where protective conditions exist, including low permeability overlying materials, favorable groundwater gradients, or reduced contaminant loading in recharge areas. The conditions in item A do not apply in areas designated as approved for drilling on the limestone and dolomite bedrock well construction maps published by the commissioner.

Subp. 5. **Water-supply well completed in limestone or dolomite.** Where a potable water-supply well meeting the conditions of subpart 4 or a nonpotable water-supply well is completed in limestone or dolomite bedrock, the following apply:

A. If the static water level in the well is more than ten feet above the limestone or dolomite:

(1) steel casing must be installed into the limestone or dolomite by driving the casing with a drive shoe through unconsolidated materials or sandstone into, but not more than ten feet into, the limestone or dolomite; or

(2) a bore hole must be drilled into the limestone or dolomite and steel casing installed to the bottom of the bore hole. If the bore hole extends more than ten feet into the limestone or dolomite, the bore hole must be a minimum of 3.0 inches larger, or 3.5 inches larger for casings deeper than 100 feet and larger than 12 inches inside diameter, than the outside diameter of the casing or couplings, whichever is larger. The annular space surrounding the casing must be grouted from the bottom of the casing to the top of the bedrock with neat-cement grout or cement-sand grout. The unconsolidated materials portion of the annular space must be grouted according to part 4725.3050, subparts 1 to 3.

B. If the static water level in the well is less than ten feet above the limestone or dolomite, a bore hole must be drilled a minimum of 3.0 inches larger, or 3.5 inches larger for casings deeper than 100 feet and larger than 12 inches inside diameter, than the outside diameter of the casing or couplings, whichever is larger. The bore hole must extend a minimum of 20 feet below the static water level. Steel casing must be installed to the bottom of the bore hole. The annular space from the bottom of the casing to the top of bedrock must be filled with neat-cement grout or cement-sand grout. The unconsolidated materials portion of the annular space must be grouted according to part 4725.3050, subparts 1 to 3.

Subp. 6. **Water-supply well completed below limestone or dolomite.** A water-supply well completed below limestone or dolomite where the conditions of subpart 4 apply must be constructed by drilling a bore hole a minimum of 3.0 inches larger, or 3.5 inches larger for casings deeper than 100 feet and larger than 12 inches inside diameter, than the outside diameter of the casing or couplings a minimum of ten feet below the limestone or dolomite, and a minimum of ten feet below the static water level. Steel casing must be installed to the bottom of the bore hole, and the annular space from the bottom of the casing to the top of bedrock must be filled with neat-cement grout or cement-sand grout. The unconsolidated materials portion of the annular space must be grouted according to part 4725.3050, subparts 1 to 3.

Subp. 7. **Remedial well in limestone or dolomite.** A remedial well is exempt from the requirement in subpart 5 to extend the casing 20 feet below the static water level if the well screen or open hole intersects the water table, the casing terminates no more than ten feet above the static water level, and all casing installed in limestone or dolomite is grouted with neat-cement grout or cement-sand grout.

Statutory Authority: *MS s 103I.101; 103I.111; 103I.205; 103I.221; 103I.301; 103I.401; 103I.451; 103I.501; 103I.525; 103I.531; 103I.535; 103I.541; 103I.621*

History: 33 SR 211

Published Electronically: September 2, 2008